

SEQUENCE LISTING

<110> Metabolix, Inc.
 Aquin, Stephanie
 Peoples, Oliver P.
 Snell, Kristi D.

<120> PRODUCTION OF MEDIUM CHAIN LENGTH POLYHYDROXYALKANOATES FROM
 FATTY ACID BIOSYNTHETIC PATHWAYS

<130> MBX 041

<160> 15

<170> PatentIn version 3.1

<210> 1
 <211> 43
 <212> DNA
 <213> artificial sequence

<220>
 <223> primer phaGF-EcoRI

<400> 1
 ggaattcagg aggtttttat gaggccagaa atcgctgtac ttg
 43

<210> 2
 <211> 37
 <212> DNA
 <213> artificial sequence

<220>
 <223> primer phaGR-KpnI

<400> 2
 ggggtaccct cagatggcaa atgcatgctg cccctgc
 37

<210> 3
 <211> 49
 <212> DNA
 <213> artificial sequence

<220>

<223> primer Posyn1-N

<400> 3

ccgaattcag gaggttttta ttatgagtaa caagaacaac gatgagctg
49

<210> 4

<211> 30

<212> DNA

<213> artificial sequence

<220>

<223> primer Posyn1-nrSacII

<400> 4

ttggtcggag ccatggcttc ggtcatcagg
30

<210> 5

<211> 40

<212> DNA

<213> artificial sequence

<220>

<223> primer trc-PhaG.c

<400> 5

cccaagcttt ttgacaatta atcatccggc tcgtataatg
40

<210> 6

<211> 39

<212> DNA

<213> artificial sequence

<220>

<223> primer trc-PhaG.r

<400> 6

cccaagcttt cagatggcaa atgcatgctg ccctgctg
39

<210> 7

<211> 45

<212> DNA
<213> artificial sequence

<220>
<223> primer Posynrbs.c

<400> 7
ggaattcagg aggtttttat gttaggtcag atgatgcgta atcag
45

<210> 8
<211> 35
<212> DNA
<213> artificial sequence

<220>
<223> primerPosynrbs.r

<400> 8
cgggatcctt attcacagac agaagaacta ctgcg
35

<210> 9
<211> 911
<212> DNA
<213> artificial sequence

<220>
<223> PhaG in the bacterial expression construct pMTX-PhaG

<400> 9
gaattcagga gggtttttatg aggccagaaa tcgctgtact tgatatccaa ggtcagtatc
60

gggtttacac ggagttctat cgcgcggatg cggccgaaaa cagcatcatc ctgatcaacg
120

gctcgtggc caccacggcc tcgttcgccc agacggtagc taacctgcac ccacagttca
180

acgtggttct gttcgaccag ccgtattcag gcaagtccaa gccgcacaac cgtcaggaac
240

ggctgatcag caaggagacc gaggcgcata tcctccttga gctgatcgag cacttccagg
300

099455-11501

cagaccacgt gatgtctttt tctgtggggtg gcgcaagcac gctgctggcg ctggcgcacc
360

agccgcggta cgtgaagaag gcagtgggtga gttcgtttctc gccagtgatc aacgagccga
420

tgcgcgacta tctggaccgt ggctgccagt acctggccgc ctgcgaccgt tatcaggtcg
480

gcaacctggt caatgacacc atcggcaagc acttgccgtc gctgttcaaa cgcttcaact
540

accgccatgt gagcagcctg gacagccacg agtacgcaca gatgcacttc cacatcaacc
600

aggtgctgga gcacgacctg gaacgtgcgc tgcaaggcgc gcgcaatatc aacatcccgg
660

tgctgttcat caacggcgag cgcgacgagt acaccacagt cgaggatgcg cggcagttca
720

gcaagcatgt gggcagaagc cagttcagcg tgatccgcga tgcggggccac ttcctggaca
780

tggagaacaa gaccgcctgc gagaacaccc gcaatgtcat gctgggcttc ctcaagccaa
840

ccgtgcgtga accccgccaa cgttaccaac ccgtgcagca ggggcagcat gcatttgcca
900

tctgaggtac c
911

<210> 10

<211> 1715

<212> DNA

<213> artificial sequence

<220>

<223> plasmid pTRCN-KPS1.2N. PhaC in the bacterial expression con
struc
t pKPS1.2N

<400> 10

gaattcagga ggTTTTtatt atgagtaaca agaacaacga tgagctgcag cggcaggcct
60

cggaacac cctgggctg aaccgggtca tcggtatccg ccgcaaagac ctgttgagct
120

cggcacgcac cgtgctgcgc caggccgtgc gccaacgct gcacagcgcc aagcatgtgg
180

cccactttgg cctggagctg aagaacgtgc tgctgggcaa gtccagcctt gccccgaaa
240

gcgacgaccg tcgcttcaat gacccggcat ggagcaacaa cccactttac cgccgctacc
300

tgcaaaccta tctggcctgg cgcaaggagc tgcaggactg gatcggcaac agcgacctgt
360

cgccccagga catcagccgc ggccagttcg tcatcaacct gatgaccgaa gccatggctc
420

cgaccaacac cctgtccaac ccggcagcag tcaaacgctt cttcgaaacc ggcggcaaga
480

gcctgctcga tggcctgtcc aacctggcca aggacctggt caacaacggt ggcattgcca
540

gccaggtgaa catggacgcc ttcgaggtgg gcaagaacct gggcaccagt gaaggcgccg
600

tggtgtaccg caacgatgtg ctggagctga tccagtacaa ccccatcacc gagcaggtgc
660

atccccgcc gctgctggtg gtgccgccgc agatcaacaa gttctacgta ttcgacctga
720

gccccgaaaa gagcctggca cgctactgcc tgcgctcgca gcagcagacc ttcattcatca
780

gctggcgcaa cccgaccaa gccagcgcg aatggggcct gtccacctac atcgacgcgc
840

tcaaggaggc ggtcgacgcg gtgctggcga ttaccggcag caaggacctg aacatgctcg
900

gtgcctgctc cggcggcatc acctgcacgg cattggctcg ccactatgcc gccctcggcg
960

aaaacaaggt caatgccctg accctgctgg tcagcgtgct ggacaccacc atggacaacc
1020

CGGAAACAC CCTGGGCTG AACCCGGTCA TCGGTATCCG CCGCAAAGAC CTGTTGAGCT
CGGCACGCAC CGTGCTGCGC CAGGCCGTGC GCCAACGCT GCACAGCGCC AAGCATGTGG
CCCACCTTGG CCTGGAGCTG AAGAACGTGC TGCTGGGCAA GTCCAGCCTT GCCCCGAAA
GCGACGACC TCGCTTCAAT GACCCGGCAT GGAGCAACAA CCCACTTTAC CGCCGCTACC
TGCAAACCTA TCTGGCCTGG CGCAAGGAGC TGCAGGACTG GATCGGCAAC AGCGACCTGT
CGCCCCAGGA CATCAGCCGC GGCCAGTTCG TCATCAACCT GATGACCGAA GCCATGGCTC
CGACCAACAC CCTGTCCAAC CCGGCAGCAG TCAAACGCTT CTTCGAAACC GGCGGCAAGA
GCCTGCTCGA TGGCCTGTCC AACCTGGCCA AGGACCTGGT CAACAACGGT GGCATTGCCA
GCCAGGTGAA CATGGACGCC TTCGAGGTGG GCAAGAACCT GGGCACCAGT GAAGGCGCCG
TGGTGTACCG CAACGATGTG CTGGAGCTGA TCCAGTACAA CCCCATCACC GAGCAGGTGC
ATCCCCGCC GCTGCTGGTG GTGCCGCCGC AGATCAACAA GTTCTACGTA TTCGACCTGA
GCCCCGAAAA GAGCCTGGCA CGCTACTGCC TGCGCTCGCA GCAGCAGACC TTCATCATCA
GCTGGCGCAA CCCGACCAA GCCAGCGCG AATGGGGCCT GTCCACCTAC ATCGACGCGC
TCAAGGAGGC GGTGACGCG GTGCTGGCGA TTACCGGCAG CAAGGACCTG AACATGCTCG
GTGCCTGCTC CGGCGGCATC ACCTGCACGG CATTGGCTCG CCACCTATGCC GCCCTCGGCG
AAAACAAGGT CAATGCCCTG ACCCTGCTGG TCAGCGTGCT GGACACCACC ATGGACAACC

aggtcgccct gttcgtcgac gagcagactt tggaggccgc caagcgccac tcctaccagg
1080

ccggtgtgct cgaaggcagc gagatggcca aggtgttcgc ctggatgcgc cccaacgacc
1140

tgatctggaa ctactgggtc aacaactacc tgctcggcaa cgagccgccg gtgttcgaca
1200

tcctgttctg gaacaacgac accacgcgcc tgccggccgc cttccacggc gacctgatcg
1260

aatgttcaa gagcaacccg ctgaccgcc cggacgcctt ggaggtttgc ggcactccga
1320

tcgacctgaa acaggtcaaa tgcgacatct acagccttgc cggcaccaac gaccacatca
1380

ccccgtggca gtcattgtac cgctcggcgc acctgttcgg cggcaagatc gagttcgtgc
1440

tgtccaacag cggccacatc cagagcatcc tcaaccgcc aggcaacccc aaggcgcgct
1500

tcattgaccgg tgccgatcgc ccgggtgacc cgggtggcctg gcaggaaaac gccaccaagc
1560

atgccgactc ctggtggctg cactggcaaa gctggctggg cgagcgtgcc ggcgagctgg
1620

aaaaggcgcc gaccgcctg ggcaaccgtg cctatgccgc tggcgaggca tccccgggca
1680

cctacgttca cgagcgttga gctgcagcca agcttttgac aattaatcat ccggctcgta
1740

taatgtgtgg aattgtgagc ggataacaat ttcacacagg aaacagacca tggaattcag
1800

gaggttttta tgaggccaga aatcgctgta cttgatatcc aaggtcagta tcgggtttac
1860

acggagttct atcgcgcgga tgcggccgaa aacacgatca tcctgatcaa cggctcgtg
1920

gccaccacgg cctcgttcgc ccagacggta cgtaacctgc acccacagtt caacgtgggt
1980

099152.11601

ctgttcgacc agccgtattc aggcaagtcc aagccgcaca accgtcagga acggctgatc
2040

agcaaggaga ccgaggcgca taccctcctt gagctgatcg agcacttcca ggcagaccac
2100

gtgatgtctt ttctgtgggg tggcgcaagc acgctgctgg cgctggcgca ccagccgcgg
2160

tacgtgaaga aggcagtggg gagttcgttc tcgccagtga tcaacgagcc gatgcgcgac
2220

tatctggacc gtggctgcca gtacctggcc gcctgcgacc gttatcaggt cggcaacctg
2280

gtcaatgaca ccatcggcaa gcacttgccg tcgctgttca aacgcttcaa ctaccgccat
2340

gtgagcagcc tggacagcca cgagtacgca cagatgcact tccacatcaa ccaggtgctg
2400

gagcacgacc tggaacgtgc gctgcaaggc gcgcgcaata tcaacatccc ggtgctgttc
2460

atcaacggcg agcgcgacga gtacaccaca gtcgaggatg cgcggcagtt cagcaagcat
2520

gtgggcagaa gccagttcag cgtgatccgc gatgcggggc acttcctgga catggagaac
2580

aagaccgcct gcgagaacac ccgcaatgtc atgctgggct tcctcaagcc aaccgtgcgt
2640

gaaccccgcc aacgttacca acccgtgcag caggggcagc atgcatttgc catctgaaag
2700

ctt
2703

<210> 12
<211> 1664
<212> DNA
<213> artificial sequence

<220>
<223> alkK in the bacterial expression construct pTRCNalkK

0999153-11601

960

acgatatata tgggtgttgaa gttattcatg cttgggggtat gactgagctt tcgccatttg
1020

gcacggcaaa cactccactc gcgcaccacg tagatttatc tccagatgaa aagctttcac
1080

tgcgcaaaag ccaagggcgc ccgccttacg gtgtcgagtt aaaaatcggt aatgatgagg
1140

ggattagact acctgaagat ggtcgaagta aaggcaacct aatggcgcggt gggcactggg
1200

ttattaaaga ttactttcat agcgatcctg gttcgacact ctcagatggg ttggttttcaa
1260

ctggagacgt ggctaccata gattcggacg gtttcatgac aatctgtgat cgtgcaaagg
1320

acattataaa gtctggcggg gagtggatca gtacggtaga gctggagagt attgcgattg
1380

cgcaccctca tattgttgat gctgctgtta tagctgcaag gcacgaaaaa tgggacgagc
1440

gacctctcct catcgagtt aaatccccta attcggaatt aacaagtggg gaggtatgta
1500

attatttcgc agataagggtg gctagatggc aaattccaga tgccgctatc tttgttgaag
1560

aactgccacg caatgggtact ggcaagatgt tgaagaatcg tttgcgcgag aaatatgggtg
1620

atattttatt gcgcagtagt tcttctgtct gtgaataagg atcc
1664

<210> 13

<211> 1653

<212> DNA

<213> artificial sequence

<220>

<223> alkK in the plant expression construct pUC-C4PPDK.TS.AlkK

<400> 13

ggtggtgaag ttattcatgc ttgggggatg actgagcttt cgccatttgg cacggcaaac
1020

actccactcg cgcaccacgt agatttatct ccagatgaaa agcttttact gcgcaaaagc
1080

caagggcgcc cgccttacgg tgtcgagtta aaaatcgta atgatgaggg gattagacta
1140

cctgaagatg gtcgaagtaa aggcaaccta atggcgcggtg ggcaactgggt tattaaagat
1200

tactttcata gcgatcctgg ttcgacactc tcagatgggt ggttttcaac tggagacgtg
1260

gctaccatag attcggacgg tttcatgaca atctgtgatc gtgcaaagga cattataaag
1320

tctggcggtg agtggatcag tacggtagag ctggagagta ttgcgattgc gcaccctcat
1380

attggtgatg ctgctgttat agctgcaagg cacgaaaaat gggacgagcg acctctcctc
1440

atcgagttta aatcccctaa ttcggaatta acaagtgggt aggtatgtaa ttatttcgca
1500

gataaggtgg ctagatggca aattccagat gccgctatct ttgttgaaga actgccacgc
1560

aatggtactg gcaagatttt gaagaatcgt ttgcgcgaga aatatggtga tattttattg
1620

cgcagtagtt cttctgtctg tgaataaggt acc
1653

<210> 14

<211> 6

<212> DNA

<213> artificial sequence

<220>

<223> XbaI restriction site

<400> 14

tctaga

6

000015-11601

```
<400> 15
ggtacc
      6
```

[illegible]